California Cancer Commission Studies*
Chapter XXVI

Cancer of the Ovary and Fallopian Tube

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IT IS not surprising that the ovary, with its complex embryologic and evanescent cytologic nature, is so susceptible to tumor formation. No other organ undergoes the frequent periodic changes characterized by orderly growth, hypertrophy and regression. From this cytophysiologically active organ may arise tumors of all types, benign, malignant, primary, secondary, small, large, cystic, solid, papillary, smooth-walled, unilocular and multilocular. The clinico-pathologic picture is further confused by a paucity of symptoms and the absence of a standard system of classification and nomenclature. To aid in the early diagnosis and the successful treatment of ovarian neoplasms, the following brief data are presented.

INCIDENCE

Cancer of the ovary may develop at any age, but most frequently appears after the 40th year. Cancers at this site account for approximately 10 per cent of the malignant tumors of the female genital tract.

TYPES

Retention cysts: Benign retention cysts, either of follicular or corpus luteum origin, constitute a large proportion of all ovarian cysts. Occurring most frequently during the active reproductive years, these non-neoplastic cysts may attain 5-6 centimeters in diameter and become quite painful. Fortunately, most of these cysts spontaneously regress, but an occasional one may rupture with varying degrees of severity. In far too many cases operation is done and the normal ovary is needlessly sacrificed. It is this type of cyst that is "needled" or "surgically removed," as an afterthought, following other abdominopelvic operations. This meddlesome interference is not uncommonly followed by disturbances of the menstrual cycle, painful menstruation and other signs of ovarian trauma. Small cysts are an index of normal ovarian activity and should be let alone.

Fibroma: Usually small, firm, and unilateral, this benign tumor may produce the so-called Meig's syndrome, characterized by ascites and hydrothorax. This clinical entity is not infrequently misdiagnosed as an inoperable abdominal malignancy. The removal of the tumor is followed by a complete cure. Other types of ovarian tumor may produce the same clinical picture.

Endometriosis: Malignant changes in endometrial tumors of the ovary are rare. The "chocolate-cyst of Sampson," with its dense adhesions and pseudomalignant involvement of contiguous organs, may present a gross clinico-pathologic picture of true malignancy. Observation of the presence of other stigmata of endometriosis, such as implants on the peritoneal surface of the cul-de-sac or shotty nodules in the uterosacral ligaments, will assist in the correct diagnosis. Complete regression of inoperable areas will follow either surgical or radiation castration. Fortunately there is a definite trend to conservative surgical operation in the younger patient, with an attempt to preserve the reproduction function.

Teratomas: The dermoid tumor of cystic type is usually asymptomatic, contains relatively mature tissue and infrequently develops evidence of malignancy. Surgical conservation is indicated in most instances. The opposite ovary should be carefully examined for possible involvement.

The solid teratoma is extremely malignant, contains immature tissue, and, in contrast to the dermoid cyst, has a very rapid clinical course. This kind of tumor appears most frequently in the prepubescent individual and is usually fatal despite the most radical and complete forms of therapy.

The struma ovarii, a colloid-containing tumor belonging to the teratomatous group, may cause symptoms of hyperthyroidism. Histologically it looks like thyroid tissue. This tumor has a low malignancy rating.

The chorionepithelioma is also of teratomatous origin. It is highly malignant and the prognosis is grave. The Aschheim-Zondek test is frequently helpful in diagnosing the presence of this infrequent tumor. This tumor may occur in young children.

Cystadenomas: Comprising the largest group of ovarian neoplasms, the serous and pseudomicinous types of cystadenomas present difficult problems of diagnosis and treatment. Relatively slow-growing tumors until they acquire malignant characteristics, they may present a paradox in diagnosis, as it is not uncommon to find them grossly malignant and microscopically benign, and vice versa. The presence of intra- or extracystic papillary growths indicates potential malignancy. Although it is common practice to remove only the involved ovary in the young adult, the tendency to bilateral involvement is great and conservatism is often unwise. The

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selection of the correct type or extent of surgical procedure depends more upon the operator's judgment of the gross pathologic findings than upon anything else. All ovarian cysts should be carefully examined at the time of operation. Solid tumors should be studied by frozen sections.

When the papillary projections are friable the lesion is clinically malignant and radical excision is the procedure of choice. Naturally, the surgical procedure is governed by the accessibility of the pelvic organs and the experience of the surgeon. When possible, the entire uterus and adnexae should be removed. The value of intensive irradiation is questionable, although in some instances the rate of growth may be retarded. When it is impossible to remove the involved ovaries, adequate irradiation may be followed by a temporary regression of the clinical signs of malignancy. If regression occurs following irradiation some authorities advise a second abdominal operation to remove the primary malignancy. A disturbing problem arises when the pathologist reports malignant changes in a smooth-walled ovarian tumor diagnosed and treated as a benign process by the surgeon. In such instances it is advisable to observe the patient at frequent intervals and to advise immediate operation if the remaining ovary shows any change in size.

Primary carcinoma: Fortunately, the highly malignant primary solid cancer of the ovary is relatively infrequent. In the early and clinically silent stages, the involved ovary is usually well encapsulated, and complete removal is possible. Bilateralism is common, and cure is possible only if the entire uterus and adnexae are removed. However, the clinical course of tumors of this type is relatively rapid, and the operable case is usually discovered during routine examination by the alert physician. Even in the early stages distant metastases are possible, and the prognosis therefore should be stated guardedly.

Secondary carcinoma: The solid cancer of secondary type is more common in the ovary than the primary involvement of the ovary. Such tumors are usually bilateral, and the primary tumor, frequently small and symptomless, may be in the stomach, intestines, breast, or uterus. Contiguous and lymphatic spread from the uterus is not infrequent and is thus another indication for total hysterectomy in the surgical treatment of ovarian cancer. The Krukenberg type usually has its origin in the stomach, although other parts of the gastro-intestinal tract are possible sites. The removal of the ovaries has little therapeutic value unless the primary tumor also is removed. The presence of bilateral ovarian tumors predicates a thorough study of the gastro-intestinal tract before operation is undertaken.

Recently, study of the gastric washings by the Papanicolaou-Traut technique has aided the diagnosis in the presence of bilateral ovarian tumors and the absence of gastro-intestinal signs.

SPECIAL TUMORS

Of interest are the relatively rare ovarian tumors capable of producing striking effects upon the sex characteristics of the individual. The following tumors are listed:

Granulosa cell tumors—tumors of the feminizing type—may produce sexual and somatic precocity in the prepubescent individual. In the sexually mature adult the signs of hyperesterinism caused by such tumors are less spectacular, although abnormal and heavy menstrual periods are quite frequent results. The presence of an ovarian tumor and hyperplasia of the endometrium is presumptive evidence of this type of tumor. In postmenopausal patients ovarian resurgence is indicative. Accruing statistics indicate definite malignant tendencies in tumors of this type.

Theca cell tumor, although closely related to the granulosa cell tumor, produces less hormonal disturbances, and since it occurs most frequently in the older age group, the problem of ovarian conservatism is of little import.

Dysgerminoma or the neuter type occurs most frequently in the young and sexually immature adult. Although clinical pseudo-hermaphroditism has been commonly observed in patients with dysgerminoma, it is now recognized as a coexisting state rather than a result of the tumor. Thus, tumors of this kind cause no clinically diagnostic symptoms. The tumor is considered moderately malignant.

Arrhenoblastoma or the masculinizing type may be clinically confused with the rare "adrenal-like cell tumor" of the ovary, adrenal cortical tumor and the so-called "Cushing syndrome." The presence of hypertrichosis and poorly developed secondary sex characteristics are not necessarily clinical evidence of this type of tumor. Rather, they may represent the individual's response to her own normal glandular influences. The characteristic clinical picture is one of defeminization followed by masculinization. The more immature forms of the tumor are definitely malignant.

SYMPTOMS

It should be constantly kept in mind that in the early stages there are no pathognomonic signs or symptoms by which malignant tumors of the ovary can be excluded as a possibility. Many patients are unaware of a tumor until its presence becomes noticeable by the increase in the size of the abdomen or they are able to palpate it through the abdominal wall. Pain is the most common symptom and is often in the hypogastrium; when the pain is located low in the pelvis it may herald the stage of ineradicable extension. Disturbances of menstruation do occur, and, when associated with palpable ovarian neoplasms, the presence of endometrial disease should be considered. While ascites, loss of weight and cachexia are usually considered indications of inoperability, it is not too uncommon to find the triad in the presence of a microscopically benign process amenable to present methods of treatment. The functionally active tumors produce clinical symptoms characteristic of their individual types.

DIAGNOSIS

The first step in treating suspected ovarian malignant disease is to establish the diagnosis, and this is possible only by an abdominal operation. This procedure should be carried out even in cases in which the tumor appears clinically to be malignant, as occasionally it will prove benign on microscopic examination. Rarely can tissue for diagnosis be obtained by cul-de-sac puncture or by paracentesis, with examination of the abdominal fluid for tumor cells. It is better to drain the ascites with a small incision than with a trocar, as the latter, like the peritoneoscope, may puncture the encapsulated neoplasm and spill the contents. Even when the abdomen is opened, the diagnosis is not always clear-cut. However, as a rule, a cyst of the ovary, if smooth, non-adherent, encapsulated, and unilocular, will be benign.

As in all surgical procedures the removed organ should be opened at once and the inner surfaces examined for papillary projections. While intracystic papillary growths are not always indicative of malignancy, it is best to regard them as a malignant process. Tumors that are cystic in some areas and solid in others are liable to be malignant; cysts with internal or external papillary excrescences, and all solid tumors, except the fibroma, should be suspected of malignancy. Any cyst or tumor with nodular irregular contour should be regarded with suspicion.

These rules, like all such dogmatic rules, are applicable only in the majority of instances. The cytologic interpretation is not always easy and it is not uncommon to have experienced pathologists disagree on the diagnosis. The importance of widespread distribution of the neoplasm to other parts of the abdomen is difficult to evaluate, especially when the primary tumor is of the cystadenomatous type. A guarded prognosis is wise even when the microscopic picture is one of benignity. It is well to remember that in most types of ovarian cancer there are no pathognomonic symptoms or signs and the essential early diagnosis is only possible through routine preventive examination. This means all women should have periodic pelvic examinations.

TREATMENT

There is general agreement that treatment should be by surgical removal whenever possible. In some instances it is possible to make apparently inoperable tumors operable by preoperative irradiation. However, it is well to bear in mind that nothing is gained, and often harm is done, by over-irradiation. In the presence of widespread metastases, marked improvement in general health and retardation of the malignant process may follow the removal of the primary focus. When the process is unilateral and without evidence of extracystic involvement, conservation of the remaining grossly normal ovary in the young adult is a common practice. This is not without danger and the patient should be examined frequently for many years afterward. If uterine bleeding is present the possibility of an endometrial malignancy should be ruled out. If the tumors are bilateral, primary focus in the gastro-intestinal tract should be searched for before any form of treatment is undertaken. The decision of treatment at the time of operation is not always easy, but when the process is obviously malignant the procedure of choice is the removal of the entire uterus and adnexae. However, operation in the presence of ovarian cancer is not without danger. Perforation of the intestine and bladder during operation is not uncommon and all probable sites of such accidents should be doubly checked before the abdomen is closed. Decision as to ovarian conservation should be guided by the age of the patient and the gross appearance of the tumor.

PROGNOSIS

There is no field in gynecology in which prognosis is more uncertain than it is in dealing with ovarian tumors. Permanent results following complete surgical removal of the malignant process are not strikingly satisfactory, as a large percentage of the patients die within two years after operation; and the five-year salvage is depressingly poor. Generally speaking, the cystic forms are less malignant and more amenable to treatment; they tend to regress following the removal of the primary focus. Prognosis should always be guarded, as it is not uncommon for a microscopically benign form to recur and metastasize. A satisfactory salvage can be attained only by early diagnosis, immediate and adequate operation and, when indicated, maximum irradiation. Early diagnosis is possible only through routine preventive examinations, a course too rarely advocated and practiced by the profession and too frequently unheeded by the laity.

SUMMARY

It is not necessary to remove the ovary because of the presence of benign non-neoplastic cyst which may be evidence of temporary disturbance of the ovarian follicle or corpus luteum.

All ovarian cysts should be opened at once for signs of intracystic growth. All solid tumors should be studied by immediate frozen section.

Proper treatment demands early diagnosis, which is possible only through abdominal operation. Solid and semi-solid tumors, cysts with irregular nodular contour, or with intra- and/or extracystic papillary excrescences should be suspected of malignancy. Cysts that are smooth, non-adherent, and unilocular are usually benign.

If it is possible to do so, the entire uterus and the adnexae of patients having malignant cysts or solid tumors of the ovary should be removed. Although irradiation is still of debatable value, it will retard the rate of growth in some instances.

Routine complete examinations will improve the present poor salvage rate. A cyst that either regresses or remains constant in size should be kept under observation. A cyst or tumor that increases in size should be removed.

The incidence of correct diagnosis will vary in direct ratio to the surgeon's knowledge of gross pathologic appearances, and the type or extent of treatment depends on this knowledge.

The relatively rare ovarian tumors of a type causing aberration of function usually result in characteristic clinical pictures of hormonal imbalance and for the most part are to be considered malignant.

Cancer of the Fallopian Tube

Carcinoma of the fallopian tube is a clinical curiosity in general practice. Because of its rarity, the difficulty of diagnosis and the unsatisfactory status of therapy, the prognosis invariably is bad. It occurs more commonly after the 40th year and accounts for 0.5 to 1 per cent of the malignant lesions of the female genital tract.

TYPES

Primary carcinoma occurs most frequently as a papillary type of adenocarcinoma. In approximately 70 per cent of the cases reported in the literature it occurred as a unilateral lesion.

Secondary carcinoma: More frequent than the primary form, the secondary type commonly arises from the cervix, endometrium, ovary and sigmoid colon.

SYMPTOMS

The danger of this lesion lies in the absence of any characteristic signs or symptoms. Occasionally the presence of an excessive watery sanguineous vaginal discharge is suggestive in the absence of active foci of inflammation. In most cases the sign-symptom complex of tubal cancer does not differ materially from that caused by other adnexal diseases.

DIAGNOSIS

The diagnosis is rarely made prior to operation. The presence of a soft, doughy, unilateral tubal mass in a woman near menopause should be interpreted as suspicious, and surgical intervention is the wise procedure. The true nature of the lesion is frequently overlooked at operation, as the process resembles either a pyosalpinx or hydrosalpinx. For this reason it is advisable to open the tubes for examination as soon as they are removed.

TREATMENT

Radical removal, if possible, of the internal genitalia and parametrium is the procedure of choice. Care should be taken not to rupture the involved tube. Although the value of irradiation is unknown, maximum roentgen therapy is advised.

PROGNOSIS

The infrequency of early diagnosis, the tendency to treat the disease as an inflammatory process, thus wasting valuable time, and the probable radioresistance, all combine to make the prognosis of tubal carcinoma very unsatisfactory. As with all types of genital cancer, it is curable only if treated in the early stages.

SUMMARY

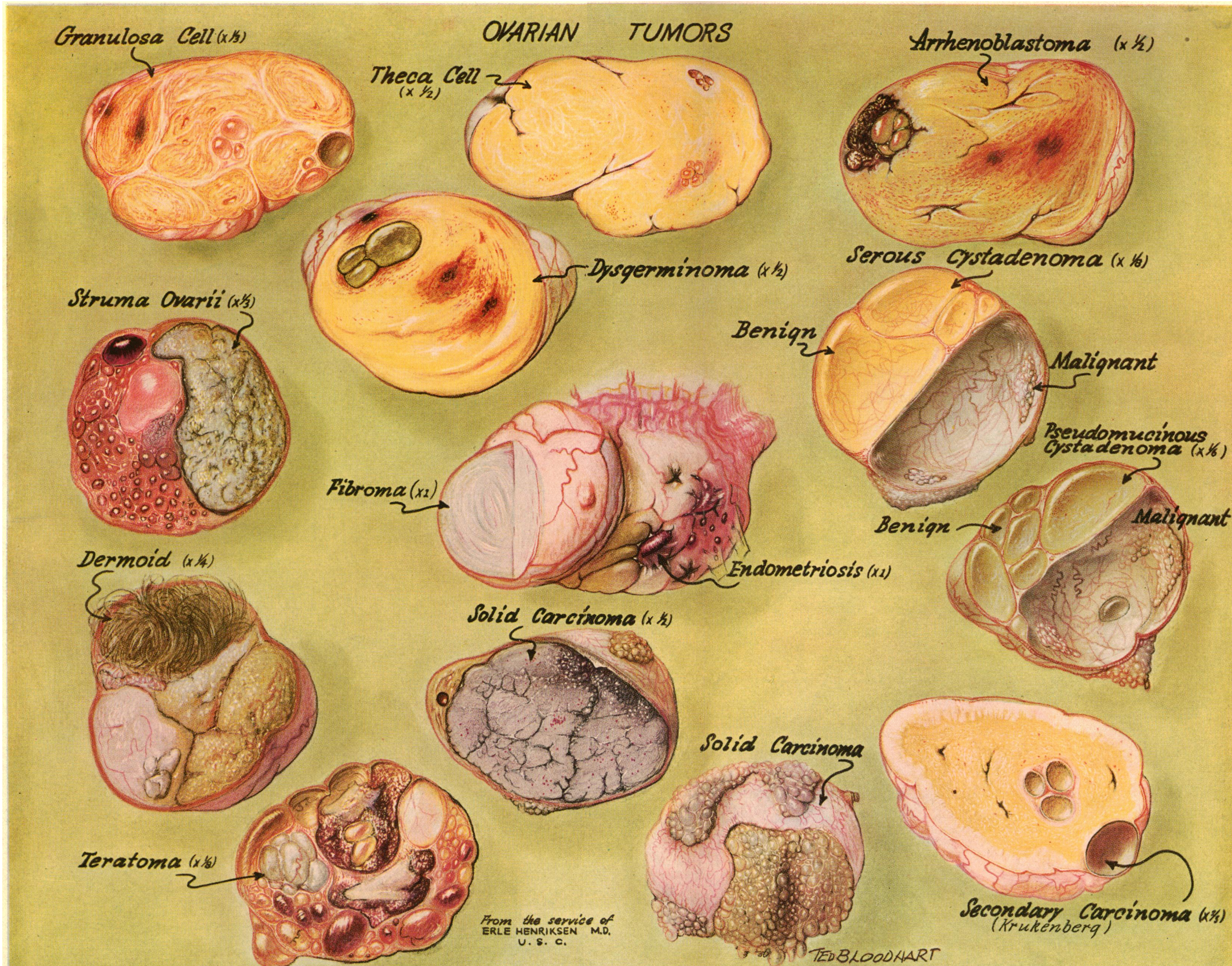
Cancer of the fallopian tube is rare. It is frequently overlooked at the time of operation because the process resembles either a pyosalpinx or hydrosalpinx.

The presence of a soft, doughy, unilateral tubal mass should rouse suspicion of tubal cancer.

The treatment of cancer of the fallopian tube is radical removal of the internal genitalia and parametrium if possible.

"Skin Cancer" by Henry F. Ullmann, M.D., Chapter X of the California Cancer Commission Studies, will appear in this section of the March issue of CALIFORNIA MEDICINE.

OVARIAN TUMORS



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